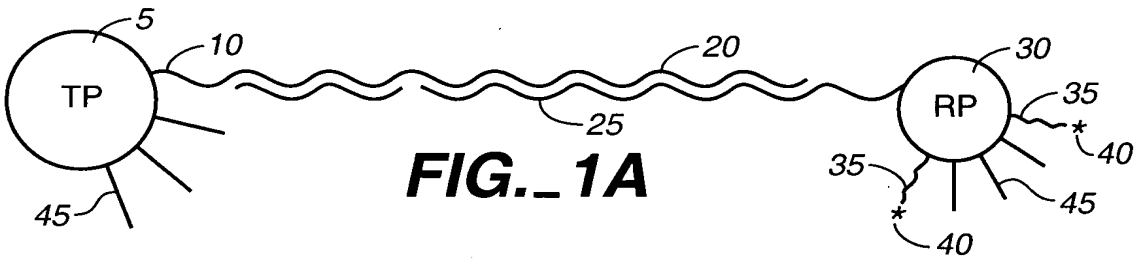


FIG._1A

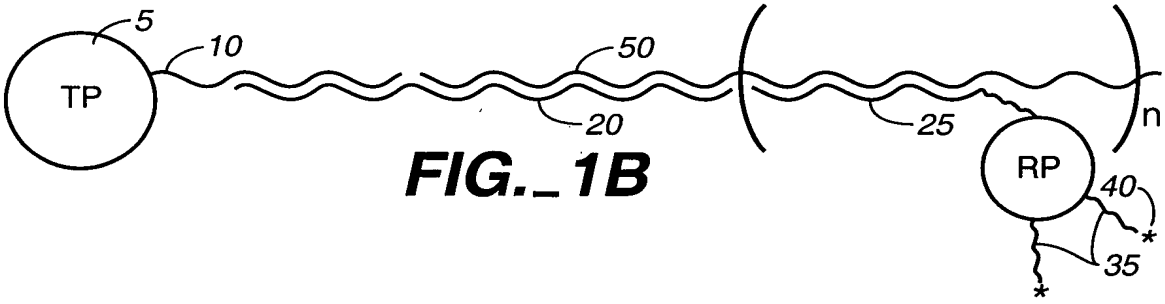


FIG._1B

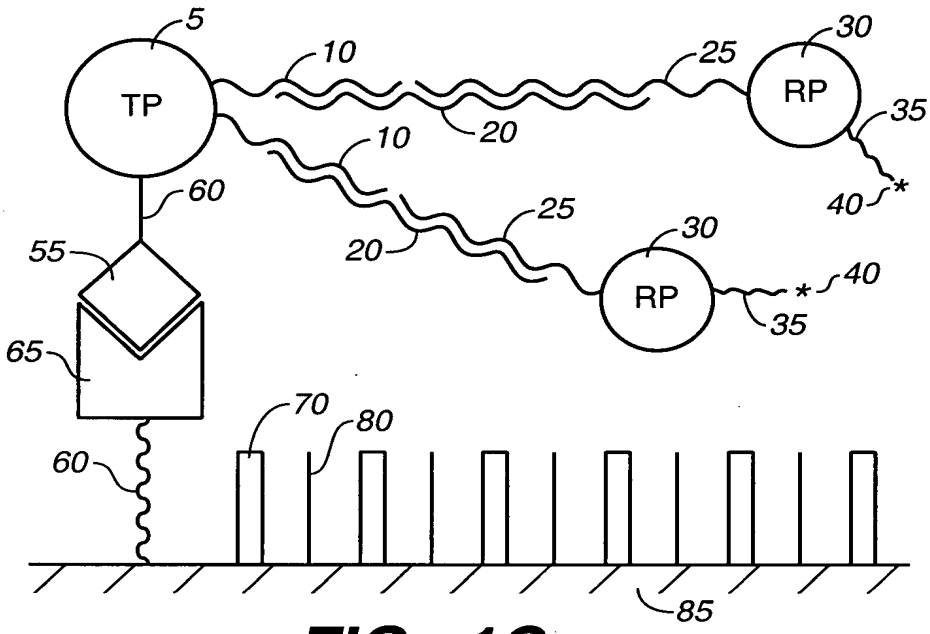


FIG._1C

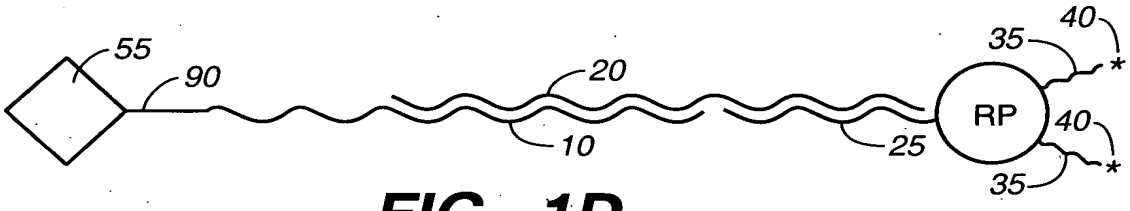
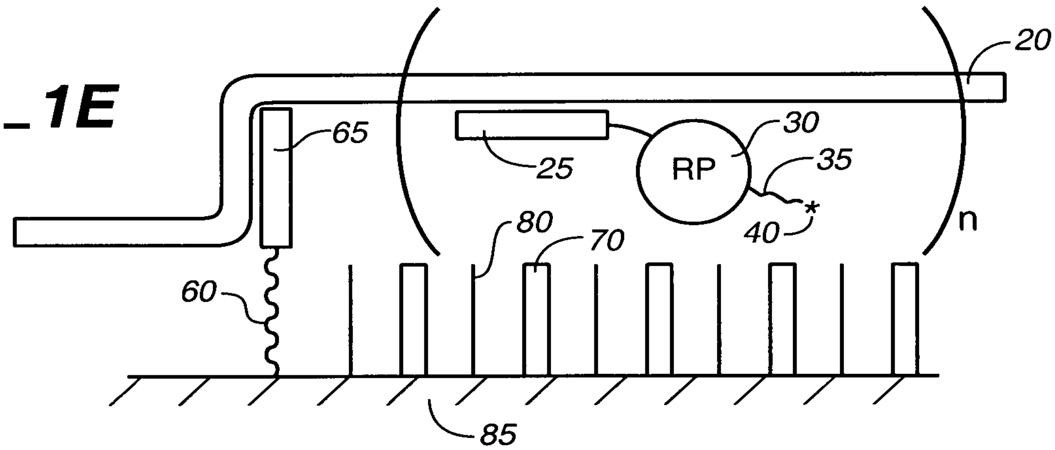


FIG._1D

FIG._1E



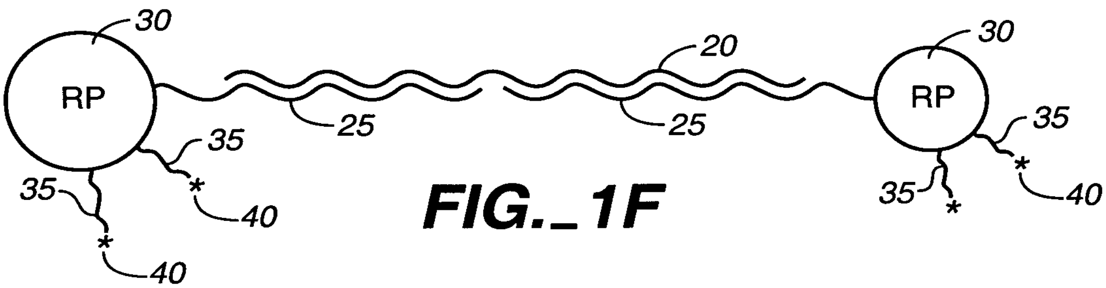


FIG._1F

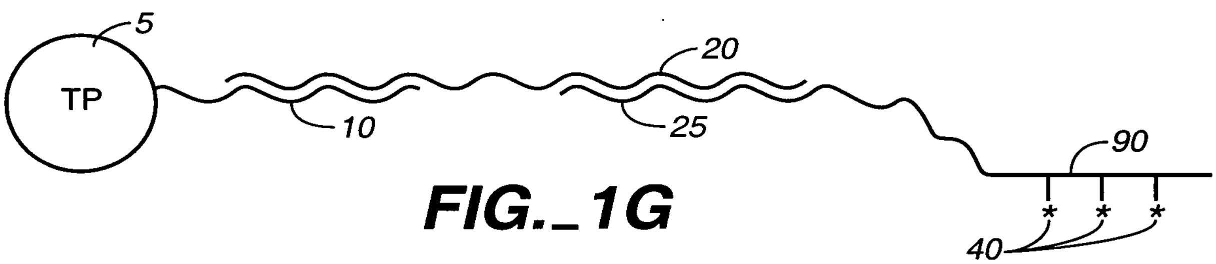
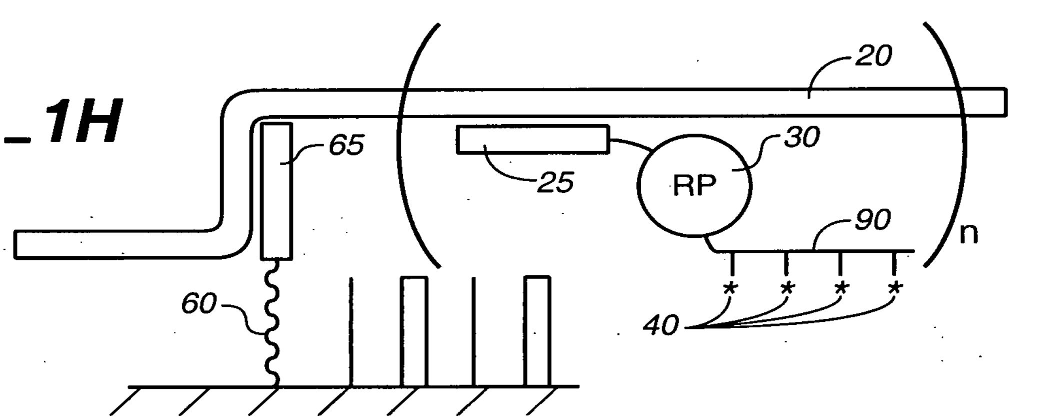


FIG._1G

FIG._1H



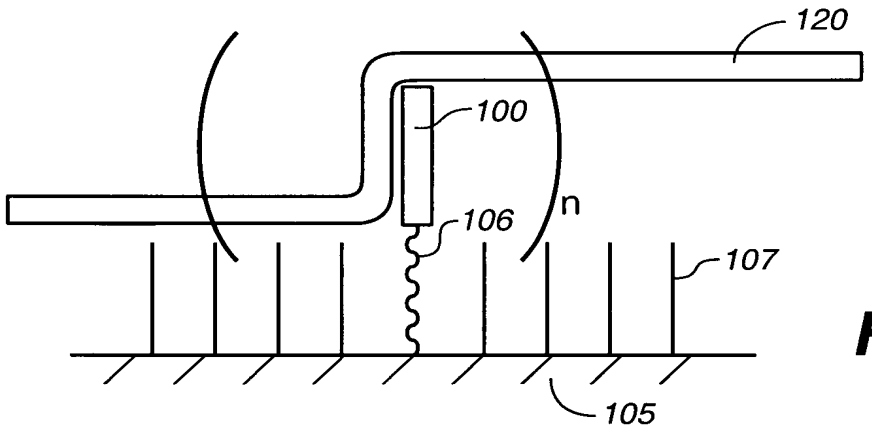


FIG._2A

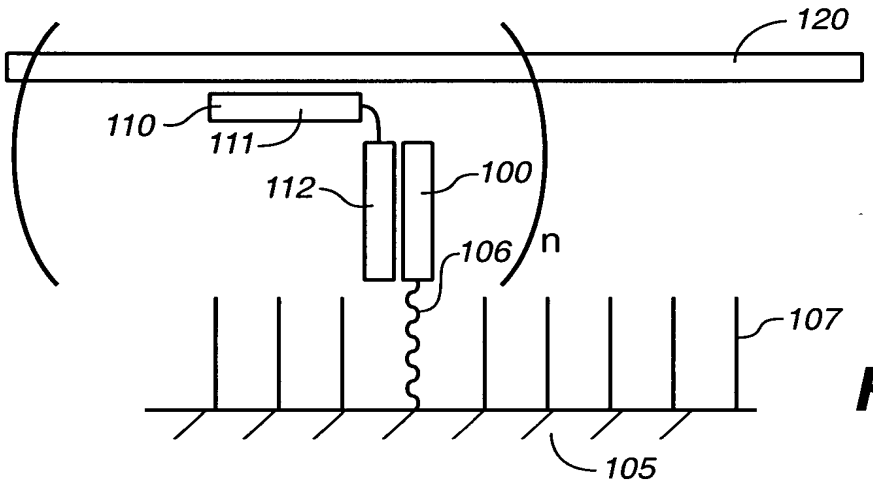


FIG._2B

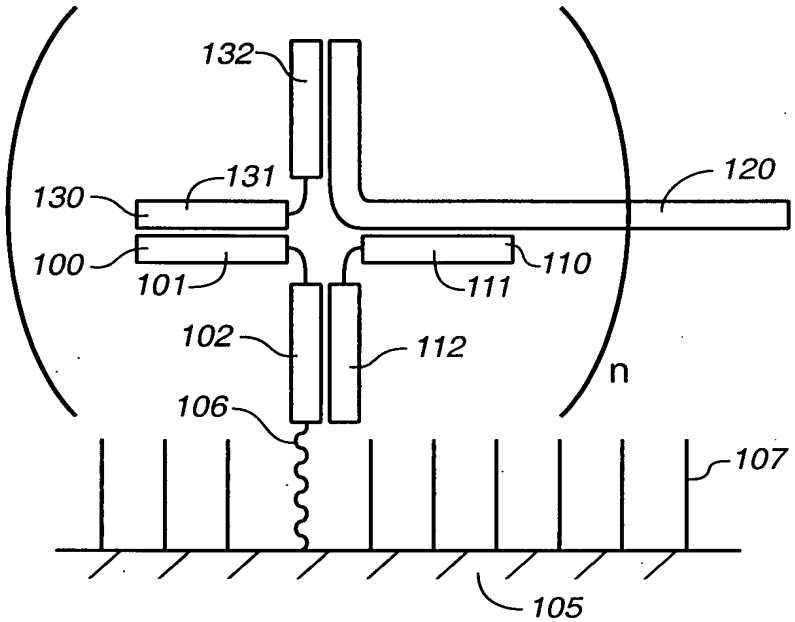
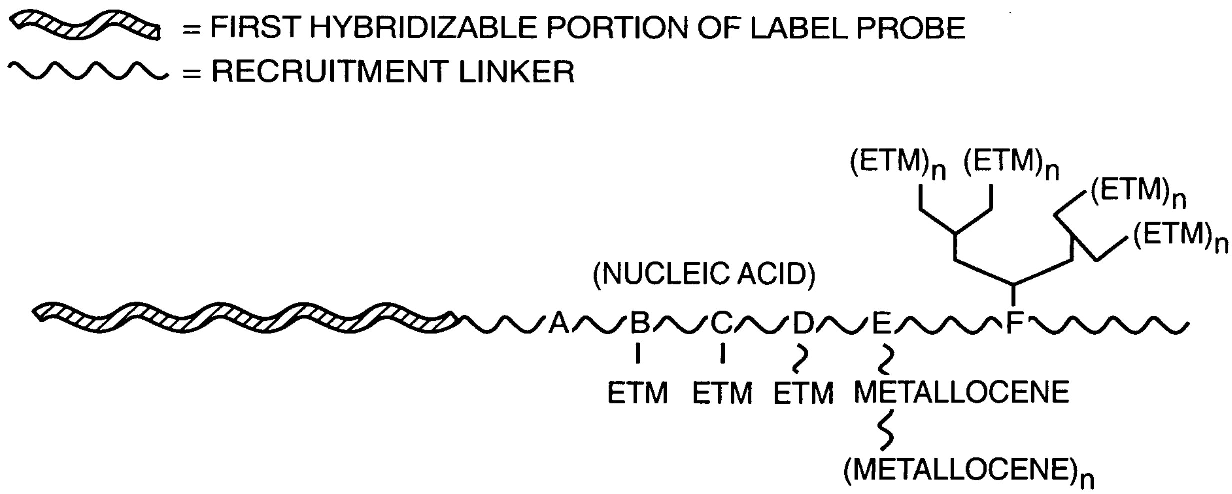
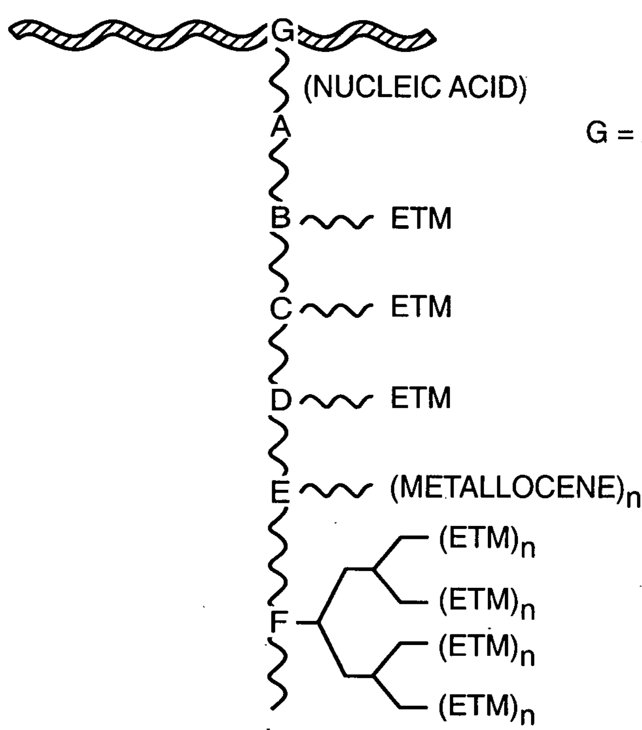


FIG._2C



A = NUCLEOSIDE REPLACEMENT
B = ATTACHMENT TO A BASE
C = ATTACHEMENT TO A RIBOSE
D = ATTACHMENT TO A PHOSPHATE
E = METALLOCENE POLYMER, ATTACHED TO A RIBOSE, PHOSPHATE, OR BASE
F = DENDRIMER STRUCTURE, ATTACHED VIA A RIBOSE, PHOSPHATE OR BASE

FIG._3A



G = ATTACHMENT VIA A "BRANCHING STRUCTURE", THROUGH RIBOSE, PHOSPHATE OR BASE

FIG._3B

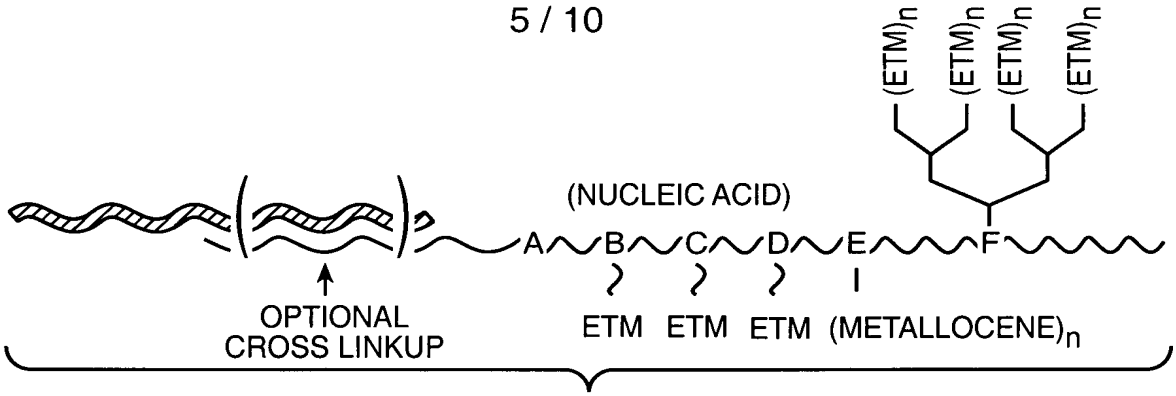


FIG._3C

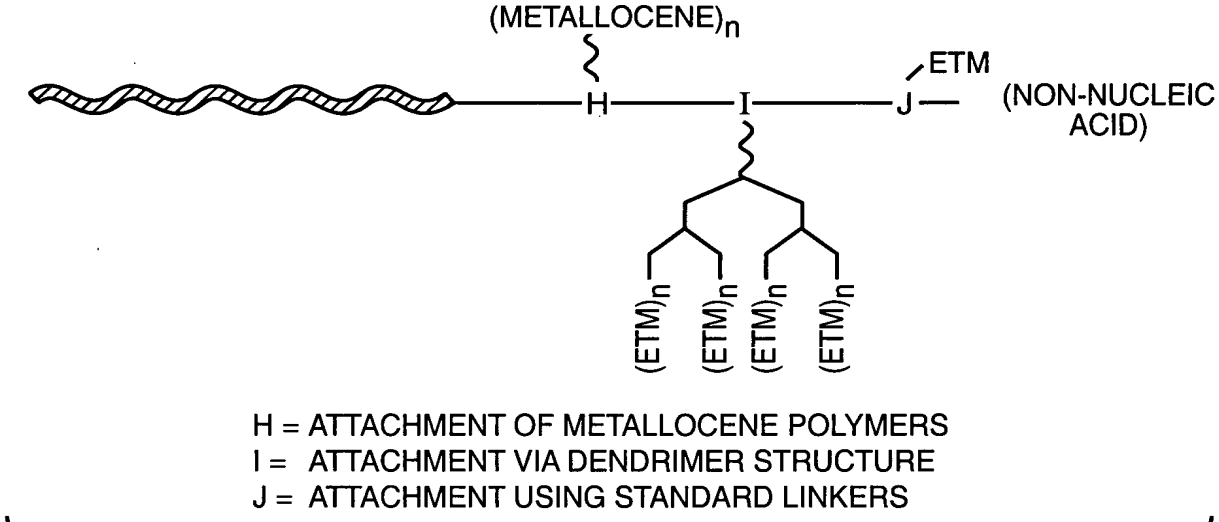


FIG._3D

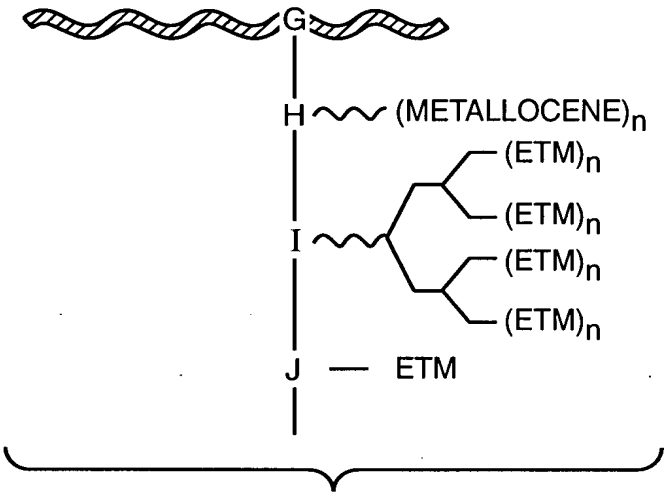
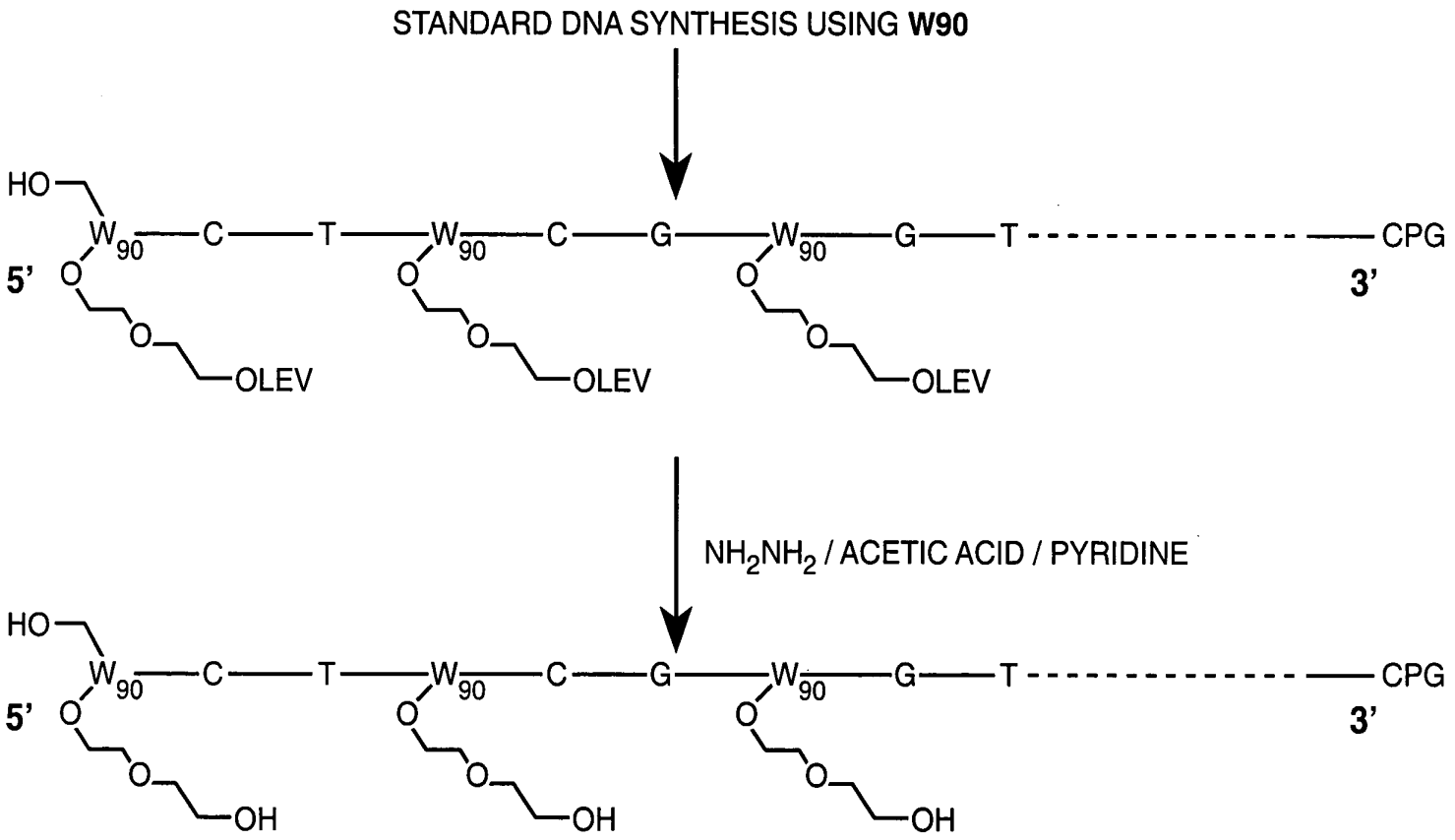


FIG._3E

FIG._4

FIG._4A
FIG._4B
FIG._4C

FIG._4A



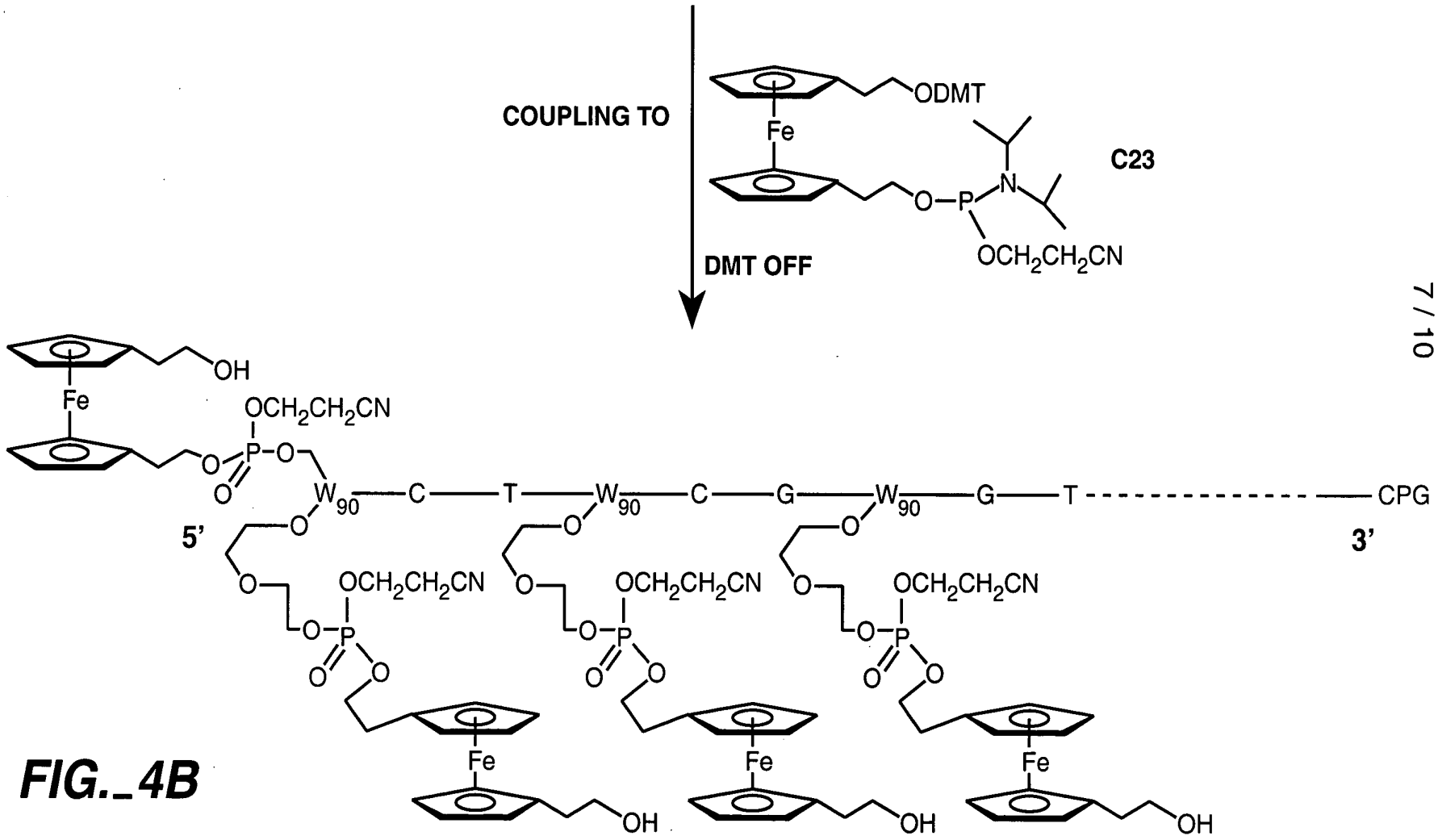
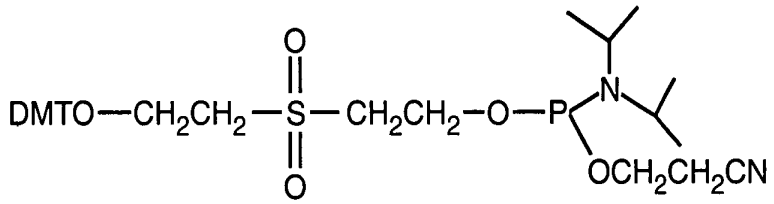

COUPLING TO
DMT OFF
ODMT
Fe
C23
O
P
N
OCH2CH2CN
OH
W90
C
T
G
CPG
5'
3'

FIG._4B



H2
DMT OFF / CLEAVAGE AND DEPROTECTON

THIS PROCESS CAN BE REPEATED UNTIL THE DESIRED # OF FERROCENE IS OBTAINED, AND THEN HYDROXY GROUPS ON FERROCENE ARE CAPPED USING THE LEFT PHOSPHORAMIDITE IN ORDER TO INCREASE THE SOLUBILITY OF FERROCENE IN WATER.

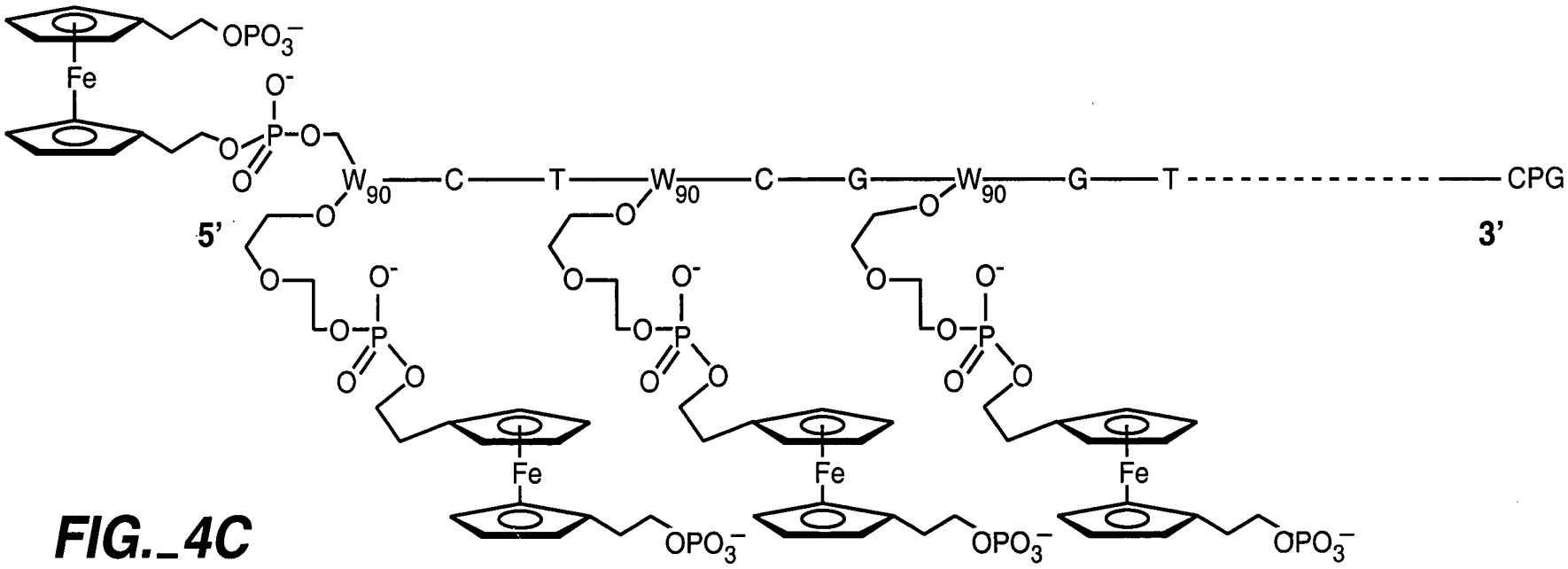


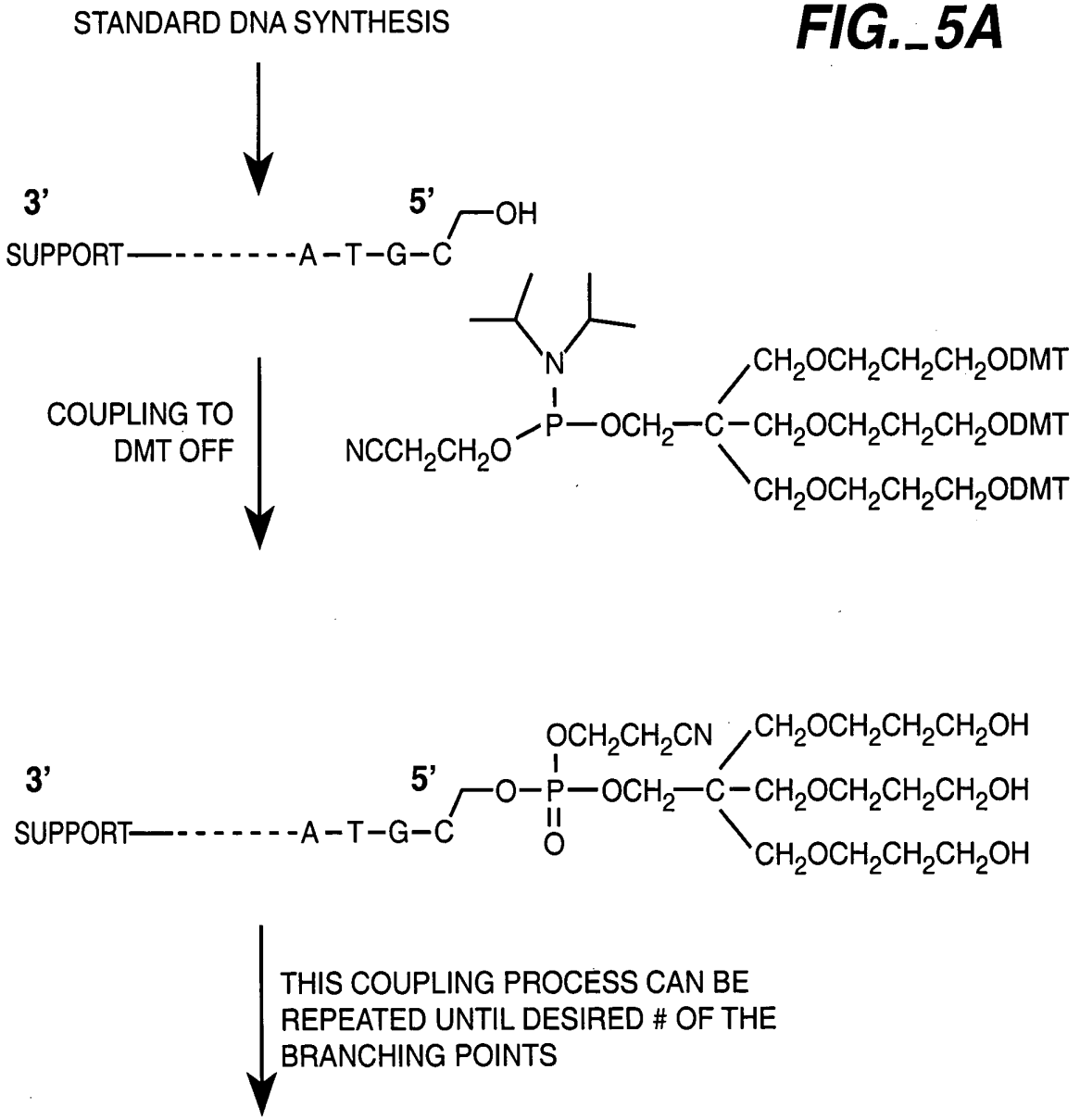
FIG._4C

FIG._5

FIG._5A

FIG._5B

FIG._5A



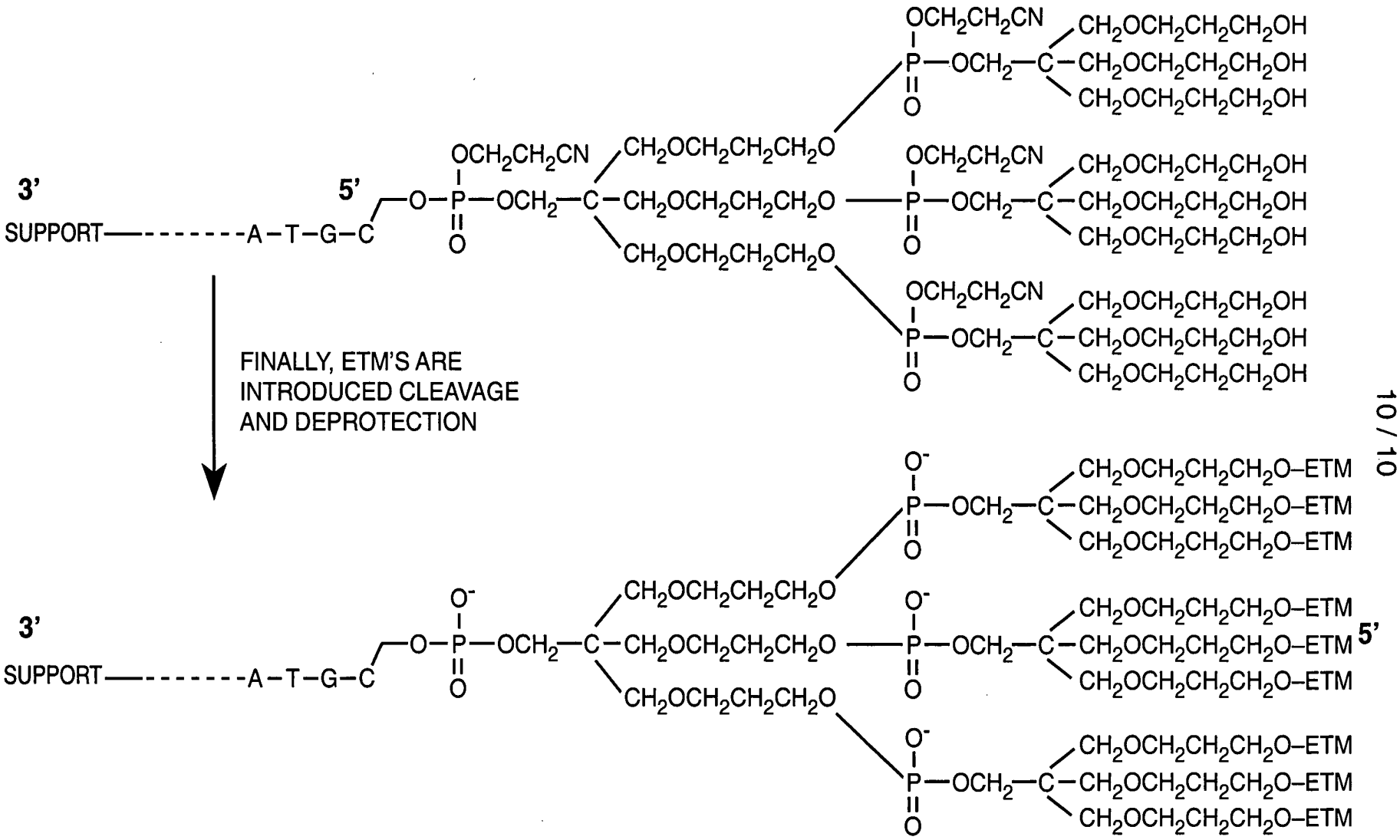

3'
5'
SUPPORT
A–T–G–C
OCH2CH2CN
CH2OCH2CH2CH2O
CH2OCH2CH2CH2OH
FINALLY, ETM'S ARE
INTRODUCED CLEAVAGE
AND DEPROTECTION
CH2OCH2CH2CH2O–ETM
5'

FIG._5B